limitation, and there is no intention in the use of such terms and expressions of excluding any equivalents of the features shown and described or portions thereof, but it is recognized that various modifications are possible within the scope of the invention claimed. Thus, it should be understood that although the present invention has been specifically disclosed by preferred embodiments, exemplary embodiments and optional features, modification and variation of the concepts herein disclosed may be resorted to by those skilled in the art, and that such modifications and variations are considered to be within the scope of this invention as defined by the appended claims. The specific embodiments provided herein are examples of useful embodiments of the present invention and it will be apparent to one skilled in the art that the present invention may be carried out using a large number of variations of the devices, device components, methods steps set forth in the present description. As will be obvious to one of skill in the art, methods and devices useful for the present methods can include a large number of optional composition and processing elements and steps.

[0291] When a group of substituents is disclosed herein, it is understood that all individual members of that group and all subgroups, are disclosed separately. When a Markush group or other grouping is used herein, all individual members of the group and all combinations and subcombinations possible of the group are intended to be individually included in the disclosure.

[0292] Every formulation or combination of components described or exemplified herein can be used to practice the invention, unless otherwise stated.

[0293] Whenever a range is given in the specification, for example, a thickness, a size, a modulus, a mass, a temperature range, a time range, or a composition or concentration range, all intermediate ranges and subranges, as well as all individual values included in the ranges given are intended to be included in the disclosure. It will be understood that any subranges or individual values in a range or subrange that are included in the description herein can be excluded from the claims herein.

[0294] All patents and publications mentioned in the specification are indicative of the levels of skill of those skilled in the art to which the invention pertains. References cited herein are incorporated by reference herein in their entirety to indicate the state of the art as of their publication or filing date and it is intended that this information can be employed herein, if needed, to exclude specific embodiments that are in the prior art. For example, when composition of matter are claimed, it should be understood that compounds known and available in the art prior to Applicant's invention, including compounds for which an enabling disclosure is provided in the references cited herein, are not intended to be included in the composition of matter claims herein.

[0295] As used herein, "comprising" is synonymous with "including," "containing," or "characterized by," and is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. As used herein, "consisting of" excludes any element, step, or ingredient not specified in the claim element. As used herein, "consisting essentially of" does not exclude materials or steps that do not materially affect the basic and novel characteristics of the claim. In each instance herein any of the terms "comprising", "consisting essentially of" and "consisting of" may be replaced with either of the other two terms. The invention illustratively described herein suitably may be practiced in the absence of any element or elements, limitation or limitations which is not specifically disclosed herein.

[0296] One of ordinary skill in the art will appreciate that starting materials, biological materials, reagents, synthetic methods, purification methods, analytical methods, assay methods, and biological methods other than those specifically exemplified can be employed in the practice of the invention without resort to undue experimentation. All art-known functional equivalents, of any such materials and methods are intended to be included in this invention. The terms and expressions which have been employed are used as terms of description and not of limitation, and there is no intention that in the use of such terms and expressions of excluding any equivalents of the features shown and described or portions thereof, but it is recognized that various modifications are possible within the scope of the invention claimed. Thus, it should be understood that although the present invention has been specifically disclosed by preferred embodiments and optional features, modification and variation of the concepts herein disclosed may be resorted to by those skilled in the art, and that such modifications and variations are considered to be within the scope of this invention as defined by the appended claims.

1. A medical sensor comprising:

a. an electronic device having a sensor comprising an accelerometer;

b. a bidirectional wireless communication system electronically connected to the electronic device for sending an output signal from the sensor to an external device and receiving commands from an external controller to the electronic device.

2. The medical sensor of claim **1** that is wearable, tissue mounted or implantable or in mechanical communication or direct mechanical communication with tissue of a subject.

3. The medical sensor of claim **1**, further comprising a wireless power system for powering the electronic device.

4. The medical sensor of claim **1**, further comprising a processor to provide a real-time metric.

5. The medical sensor of claim **4**, wherein the processor is on-board with the electronic device or is positioned in an external device that is located at a distance from the medical sensor and in wireless communication with the wireless communication system.

6. The medical sensor of claim **5**, wherein the processor is part of a portable smart device.

7. The medical sensor of claim **1** that continuously monitors and generates a real-time metric.

8. The medical sensor of claim **7**, wherein the real-time metric is a social metric or a clinical metric.

9. The medical sensor of claim **8**, wherein the clinical metric is selected from the group consisting of a swallowing parameter, a respiration parameter, an aspiration parameter, a coughing parameter, a sneezing parameter, a temperature, a heart rate, a sleep parameter, pulse oximetry, a snoring parameter, body movement, scratching parameter, bowel movement parameter, a neonate subject diagnostic parameter; a cerebral palsy diagnostic parameter, and any combination thereof.

10. The medical sensor of claim **8**, wherein the social metric is selected from the group consisting of: talking time, number of words, phonatory parameter, linguistic discourse